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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,718	01/07/2002	Patrick Chollet	Q66643	2215

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EXAMINER	
ALEJANDRO MULERO, LUZ L	
ART UNIT	**PAPER NUMBER**
1763	

DATE MAILED: 09/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/501,718	CHOLLET, PATRICK	
	Examiner	Art Unit	
	Luz L. Alejandro	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 20 July 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-13 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-13 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially" in claim 1, line 8, claim 9, lines 3 and 4, and claim 12, line 3, is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Clarification is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darras et al., WO 99/49991 in view of Sato et al., U.S. Patent 5,961,776 or Watanabe et al., U.S. Patent 6,158,383 or Ishii, U.S. Patent 6,827,972.

Darras et al. shows the invention as claimed including a device for processing the surface of a container, wherein the processing is accomplished by a low-pressure plasma, by excitation of a reaction fluid with microwave electromagnetic waves, and wherein the container is placed in an enclosure 1 made of conductive material, inside of which enclosure, the microwaves are introduced by means of a coupling device, characterized in that the enclosure is a cylinder generated by rotation around a main axis of the container, in that the coupling device has a wave guide tunnel 8 having a rectangular cross section, which extends in a direction perpendicular to the axis of the enclosure and which opens into one wall thereof in the shape of a window which, in projection on a plane tangent to the enclosure, is rectangular in shape, the smaller dimension of which rectangle corresponds to its dimension along the direction of the axis of the enclosure, and in that the inside diameter of the enclosure is such that the microwaves are propagated in the enclosure primarily according to a mode in which the electrical field, resulting from the propagation of the microwaves has an axial symmetry generated by rotation; and introducing the reaction fluid into the container in such a way that the processing can be applied to the inner face or the outer face of the container, and wherein in the inside of the enclosure, a cavity 2 is delimited by a wall 3 made of a material that is transparent to the microwaves, and the container 18 is received inside the cavity (see, for example, the abstract and figs. 1 and 4 and their descriptions). Furthermore, note that the apparatus of Darras et al. is used for depositing a material by low-pressure plasma.

Darras et al. is applied as above and further discloses that the frequency of the microwaves is 2.45 GHz, but does not expressly disclose the electric field resulting from the propogation of the microwaves has an axial symmetry with respect to the central axis of the enclosure, the claimed inside diameters of the enclosure and the claimed variations of intensity of the electrical field. However, Sato et al. discloses a microwave apparatus that has an axial symmetry with respect to the central axis of the enclosure (see figs. 3A-3B and their descriptions), as does Watanabe et al. (see fig. 3 and its description) and Ishii (see figs. 3A-3B and their descriptions). In view of these disclosures, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Darras et al. so as to have an electric field resulting from the propogation of the microwaves to have an axial symmetry with respect to the central axis of the enclosure because such an electric field distribution enables a uniform plasma.

With respect to the claimed inside diameters of the enclosure, Darras et al. clearly discloses that the dimensions of enclosure are selected depending on the object to be processed and the coupling mode required (see, for example, page 12, lines 10-16). Therefore, it would have been an obvious choice of design to one having ordinary skill in the art at the time the invention was made to select/optimize the inside diameter of the enclosure as claimed depending on the object to be processed and the coupling mode required, and such limitation would not lend patentability to the instant application absent the showing of unexpected results. Furthermore, the claimed variations of the

intensity of the electrical field will be achieved depending on the dimension of the enclosure.

Moreover, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Darras et al., US 6,827,972 in view of Sato et al., U.S. Patent 5,961,776 or Watanabe et al., U.S. Patent 6,158,383 or Ishii, U.S. Patent 6,827,972.

Darras et al. shows the invention as claimed including a device for processing the surface of a container, wherein the processing is accomplished by a low-pressure plasma, by excitation of a reaction fluid with microwave electromagnetic waves, and wherein the container is placed in an enclosure 1 made of conductive material, inside of which enclosure, the microwaves are introduced by means of a coupling device, characterized in that the enclosure is a cylinder generated by rotation around a main axis of the container, in that the coupling device has a wave guide tunnel 8 having a rectangular cross section, which extends in a direction perpendicular to the axis of the enclosure and which opens into one wall thereof in the shape of a window which, in projection on a plane tangent to the enclosure, is rectangular in shape, the smaller dimension of which rectangle corresponds to its dimension along the direction of the axis of the enclosure, and in that the inside diameter of the enclosure is such that the

microwaves are propagated in the enclosure primarily according to a mode in which the electrical field, resulting from the propagation of the microwaves has an axial symmetry generated by rotation; and introducing the reaction fluid into the container in such a way that the processing can be applied to the inner face or the outer face of the container, and wherein in the inside of the enclosure, a cavity 2 is delimited by a wall 3 made of a material that is transparent to the microwaves, and the container 18 is received inside the cavity (see, for example, the abstract and figs. 1 and 4 and their descriptions). Furthermore, note that the apparatus of Darras et al. is used for depositing a material by low-pressure plasma.

Darras et al. is applied as above and further discloses that the frequency of the microwaves is 2.45 GHz, but does not expressly disclose the electric field resulting from the propogation of the microwaves has an axial symmetry with respect to the central axis of the enclosure, the claimed inside diameters of the enclosure and the claimed variations of intensity of the electrical field. Sato et al. discloses a microwave apparatus that has an axial symmetry with respect to the central axis of the enclosure (see figs. 3A-3B and their descriptions), as does Watanabe et al. (see fig. 3 and its description) and Ishii (see figs. 3A-3B and their descriptions). In view of these disclosures, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Darras et al. so as to have an electric field resulting from the propogation of the microwaves to have an axial symmetry with respect to the central axis of the enclosure because such an electric field distribution enables a uniform plasma.

Furthermore, Darras et al. clearly discloses that the dimensions of enclosure are selected depending on the object to be processed and the coupling mode required (see, for example, col. 6, lines 53-57). Therefore, it would have been an obvious choice of design to one having ordinary skill in the art at the time the invention was made to select/optimize the inside diameter of the enclosure as claimed depending on the object to be processed and the coupling mode required, and such limitation would not lend patentability to the instant application absent the showing of unexpected results. Furthermore, the claimed variations of the intensity of the electrical field will be achieved depending on the dimension of the enclosure. Moreover, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leprince et al., US 5,063,330 in view of Sato et al., U.S. Patent 5,961,776 or Watanabe et al., U.S. Patent 6,158,383 or Ishii, U.S. Patent 6,827,972.

Leprince et al. shows the invention as claimed including a device for processing the surface of a container, wherein the processing is accomplished by a low-pressure plasma, by excitation of a reaction fluid with microwave electromagnetic waves, and wherein the container is placed in an enclosure 10 made of conductive material, inside of which enclosure, the microwaves are introduced by means of a coupling device,

characterized in that the enclosure is a cylinder generated by rotation around a main axis of the container, in that the coupling device has a wave guide tunnel 38 which extends in a direction perpendicular to the axis of the enclosure, and the inside diameter of the enclosure is such that the microwaves are propagated in the enclosure primarily according to a mode in which the electrical field, resulting from the propagation of the microwaves has an axial symmetry generated by rotation; and introducing the reaction fluid into the container in such a way that the processing can be applied to the inner face or the outer face of the container, and wherein in the inside of the enclosure, a cavity is delimited by a wall 12 made of a material that is transparent to the microwaves; and the container is received inside the cavity (see, for example, the abstract and figs. 1-3 and their descriptions).

Leprince et al. is applied as above but does not expressly disclose the wave guide tunnel has a rectangular cross section and opens into one wall thereof in the shape of a window which, in projection on a plane tangent to the enclosure, is rectangular in shape, the smaller dimension of which rectangle corresponds to its dimension along the direction of the axis of the enclosure. However, the configuration of the claimed wave guide is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed wave guide is significant.

Additionally, Leprince et al. further discloses that the frequency of the microwaves is 2.45 GHz, but does not expressly disclose the electric field resulting from the propogation of the microwaves has an axial symmetry with respect to the central

axis of the enclosure, the claimed inside diameters of the enclosure and the claimed variations of intensity of the electrical field. Sato et al. discloses a microwave apparatus that has an axial symmetry with respect to the central axis of the enclosure (see figs. 3A-3B and their descriptions), as does Watanabe et al. (see fig. 3 and its description) and Ishii (see figs. 3A-3B and their descriptions). In view of these disclosures, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus of Leprince et al. so as to have an electric field resulting from the propogation of the microwaves to have an axial symmetry with respect to the central axis of the enclosure because such an electric field distribution enables a uniform plasma.

With respect to the claimed inside diameters of the enclosure, a prima facie case of obviousness still exists because it would have been an obvious choice of design to one of ordinary skill in the art to optimize the dimensions of the enclosure during routine experimentation depending upon, for example, the object to be processed and the coupling mode required, and the limitation would not lend patentability to the instant application absent the showing of unexpected results. Furthermore, the claimed variations of the intensity of the electrical field will be achieved depending on the dimension of the enclosure. Moreover, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Response to Arguments

Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection. Furthermore, regarding applicant's argument that Darras does not show the inside diameter of the cavity to be a result effective variable, the examiner submits that Darras acknowledges the dimensions to be result effective variables (see, for example, col. 6, lines 53-57 of US Patent 6,827,972).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luz L. Alejandro whose telephone number is 571-272-1430. The examiner can normally be reached on Monday to Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Luz L. Alejandro
Primary Examiner
Art Unit 1763

September 22, 2005